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Date: NOV 6 1986

Subject: Site Visit Report - Johns-Manville - Waukegan, Illinois

From: Brad Bradley, Remedial Project Manager

Illinois/Indiana Unit

To: Johns-Manville-Waukegan, Illinois Site File

Thru: Russell Diefenbach, Chief

Illinois/Indiana Unit

Date of Inspection: September 10, 1986 at 10:15 a.m.

Personnel Participating

Don Mandry - Johns-Manville

Kurt Neibergall - Illinois EPA

Brad Bradley - U.S. EPA

Larry Johnson - U.S. EPA

Richard McGaw - U.S. EPA Consultant

Purpose

The purpose of the site visit was to familiarize the participant with the layout, waste composition, and waste handling practices at the site in preparation for a September 12, 1986 meeting with Johns-Manville.

Summary

Pictures taken during the site visit are displayed in Attachment I to this report.

Johns-Manville (now Manville Sales Corporation) is a facility engaged in the manufacture of building materials, specifically flex board, transite pipe and other roofing materials, flooring sheeting, and Thermo-12 refractory. According to Don Mandry, the use of asbestos in manufacturing activities was discontinued in

approximately January 1986; other materials have been substituted for asbestos. With the exception of the sheeting process, which will be discontinued, Johns-Manville (J-M) plans to continue to operate all present manufacturing processes in the foreseeable future. U.S. EPA did not observe the manufacturing processes during this site visit.

J-M contains a 120 acre waste disposal area, the majority of which is elevated significantly with respect to the surrounding land. A topographic map of the waste disposal area is included in this report as Attachment II. Wastes deposited in the past include asbestos, heavy metals (primarily lead and chromium), organics (primarily xylene), and thiram. The waste disposal area can be divided into three basic areas: the dry waste area, the wet waste area, and the wastes comprising the majority of the perimeter of the waste disposal area. A map indicating the sizes and locations of the different disposal areas and the flow for the wastewater treatment system is shown as Attachment III to this report.

The dry disposal area, located in the southern and eastern portions of the site, consists of the sludge disposal pit, the miscellaneous disposal pit, the asbestos disposal pit, and several waste piles and former waste disposal areas.

The miscellaneous waste pit presently receives waste materials containing no asbestos, according to Mr. Mandry. This pit will remain active in the future. The walls of the pit are littered with roofing materials, fibrous, white wastes, and other miscellaneous wastes and ~~form a~~ ^{barrier} continuous, with the exception of an opening in the northwest corner, which serves as a pathway for runoff in the area.

The sludge disposal pit receives dredged materials from the wastewater treatment system. According to Don Mandry, the sludge is transported by truck and dumped along the sides of the pit. Although considered by J-M to be a wet disposal area, the pit was dry during the site visit and has the appearance of a lake bed; there is a high potential for particles to become airborne. The sludge level in the pit is very near the level of the surrounding ground surface; thus, the pit appears to be very near its capacity. Fibrous materials are contained in the sludge, and the sides of the pit are covered with miscellaneous debris including white, fibrous materials.

The asbestos disposal pit or " friable" asbestos pit is the pit in which the facility's friable asbestos wastes are deposited. It is bounded on three sides, and the west side is open to allow waste materials to be transported into the pit. The sides of the pit are not covered with soil and are littered with pallets, tires, and other miscellaneous debris. The base of the pit was covered with soil, with the exception of the central area, which was sloppily covered such that some bagged waste and some loose, white, fibrous material was clearly visible and open to the atmosphere.

There are basically four miscellaneous waste piles at the site: one along the western site boundary, one in the northwest corner of the site, one in the northeastern area of the site, next to the industrial canal, and one between the asbestos disposal pit and the miscellaneous disposal pit (see shaded area on Attachment III). The first was covered with soil, but contained significant quantities of roofing shingle cuttings and piles of white, fibrous materials. The second was not thoroughly inspected but appeared to be covered uniformly, and contained small quantities of miscellane-

surficial debris. The third was covered with soil and well-vegetated, and no debris was observed; however, this area was not thoroughly inspected during the visit. The area between the two disposal pits was also covered with soil and contained miscellaneous surficial debris; the same was true for all roadsides.

The wet waste area consists of the wastewater treatment system and all associated berms and levees. Fibrous materials and miscellaneous suspended materials are settled out in the system, and the clean water at the end of the system is pumped back to manufacturing for reuse.

Refer to Attachment III to supplement the following discussion. As noted above, Attachment III is slightly in error with respect to present site conditions. Wastewater from pipe insulation manufacturing activities is pumped to the "black ditch" via underground piping (denoted as "sewer" in Attachment III). The black ditch was so named because the effluent that once entered it was black; however, the ditch is now milky white from the fibrous suspension, composed primarily of calcium and silicate, it contains. The effluent is pumped up from the east end of the ditch to the pond in the southwestern section of the site (see Attachment III). The effluent in the pond flows northward, where it is joined by the paper mill effluent. The paper mill effluent is pumped overhead and enters a canal which flows northeast to the aforementioned pond; the paper mill effluent canal was not observed during the site visit. The combined effluent streams enter the mixing basin, which is a large pond equipped with a series of levees that increase the wastewater retention time. At the north end of the mixing basin, the wastewater enters the northernmost pond which then

receives the flexboard effluent stream. The flexboard effluent is pumped overhead and enters a long, angular canal; it is very reddish at the pipe outlet and turns green shortly after entering the canal. The effluent flows to the southeast in the canal and enters an interim pond, which contained an orangeish-red scum on the surface, before joining the northernmost pond. As indicated in Attachment III, a canal once transported the flex board effluent directly to the northernmost pond; however, this canal is presently filled nearly to the top with sludge. From the northernmost pond, the wastewater flows east to the settling basin, the largest pond at the site, and then to the collection basin, which is basically a swampy area. The wastewater then flows through the soil (a natural dam) to the east ditch. The water flows north, curves to the west, goes through a culvert, and is transported across the north site road into the industrial canal. Make-up water from Lake Michigan is pumped into the industrial canal to compensate for evaporative losses. The water flows west from the industrial canal into the pumping lagoon and is pumped to the manufacturing processes for reuse.

There are several flaws in the wastewater treatment system which allow it to be circumvented. The upper level of the northernmost pond and the settling basin are approximately 15 feet higher than the surface of the industrial canal and are separated from the industrial canal by only a thin wall of soil and waste materials. The waste materials are pipes and rolled roofing materials which are arranged parallel to the direction that water would naturally migrate through the wall. Water was trickling through various points on the wall during the site visit. Of more significance is the fact that a small ditch which is joined to the south end of the east ditch by a culvert is also joined to ~~three~~ three culverts which emerge from the area.

immediately north of the miscellaneous waste pit.

Many of the berms and all of the levees in the waste after treatment system are composed of a mixture of soil and waste materials; the waste materials are exposed directly to the atmosphere in many areas.

The western boundary and most of the northern boundary of the waste disposal area are composed of waste materials which are completely exposed to the atmosphere. Cement pipes and called roof ing materials are stacked to form a very steep, nearly vertical, wall which is completely open to the atmosphere. As mentioned above, water trickles through the portion of the northern boundary that is adjacent to the northernmost pond and the settling pond. The southern site of the exact thickness of the soil cover is not known. The eastern site of the no waste materials directly exposed to the atmosphere; however, boundary is covered with soil and is overgrown with vegetation. Their boundary is open except for the eastern boundary of the site.

The exact thickness of the soil cover is not known. The eastern site materials covered with soil and vegetated in exactly the same manner as, and connected to, the southern site boundary.

A surface runoff pathway exists at the northeast corner of the miscellaneous disposal pit. The eastern wall of the pit is not continuous, and surface runoff from the pit and surrounding areas flows through the opening in the pit (see Attachment III).

A surface runoff pathway exists at the northeast corner of the miscellaneous disposal pit by surface runoff. In an apparent effort to locate approximately 50 feet from Lake Michigan. Following runoff across the road contained debris that had been transported from the surface soil were evident, and a fence that was erected across the road, and to a low, wet area in front of the sand bar across the road, and to a low, wet area in front of the sand bar.

To close off this surface runoff pathway, J-M had recently deposited several mounds of dirt along the northeast corner of the miscellaneous pit. Another potential surface runoff pathway is through the ~~three~~ culver connected to the small ditch (that is joined with the east ditch by a culvert); there was no clear evidence to indicate whether the ~~three~~ culverts were sealed off or remained open. Apparently, with the exception of the south site boundary, for which no clear surface runoff pathway was observed, the remainder of the surface runoff from the site flows into either the disposal pits or the various ponds of the wastewater Treatment system.

As indicated by the vegetative growth around the site, the ground water flows to the north and then east into the lake. The placement of the monitoring wells around the site for the remedial investigation is inadequate for accurately characterizing potential ground water contamination from the site because there are no wells to the north of the site, and the three wells installed east of the site are located close to Lake Michigan and are thus influenced by backflow from the lake water. The wells observed were slightly rusted but were otherwise in good shape and unaffected by factors such as frost heaving. Each well observed was equipped with a cap with a lock. With the lake to the east and Illinois Beach State Park to the north, there are no potential receptors located downgradient from the J-M site.

Necessary follow-ups

The site visit generated much useful information, but since Don Mand could not answer most of the questions asked, it became evident that more information is necessary for U.S. EPA and its consultant to determine the appropriate remedy for the site. The remedy must

N.Niedergang
C: R.D.Effenbach

Attachments

The best way for U.S. EPA to gather the necessary information would be to change the scope of the September 12, 1986 meeting. U.S. EPA should contact J-M and inform them that, due to the findings during the site visit, it would be more beneficial to make the meeting an information gathering session and that all should bring personnel knowledgeable of past site activities and future site plans to the meeting to facilitate the information exchange. It would be helpful for U.S. EPA and its consultants to generate a list of questions for the meeting.

consider the types and locations of contaminants generated from past site activities and must be, to the greatest extent possible, compatible with J-M's present activities and future plans for the site.

Attachment I

Photographs

Description of Photographs

Page 1

Top: Waste materials east of asbestos disposal pit

Center: Waste on berm of sludge disposal pit

Bottom: East end of sludge disposal pit (taken from the south)

Page 2

Top: Central portion of sludge disposal pit (taken from the south)

Center: West end of sludge disposal pit (taken from the south)

Bottom: Entry area of asbestos disposal pit (from north)

Page 3

Top: South berm of asbestos disposal pit (from north)

Center: same as above

Bottom: Active area of asbestos disposal pit with recently deposited wastes (from north)

Page 4

Top: Eastern area of asbestos disposal pit (from north)

Center: North berm of asbestos disposal pit

Bottom: Berm between asbestos disposal pit and sludge disposal pit

Page 5

Top: North end and berm of miscellaneous disposal pit (from west)

Center: Northeast area of miscellaneous disposal pit (from west)

Bottom: East end and berm of miscellaneous disposal pit (from west)

Page 6

Top: East end and berm of miscellaneous disposal pit (from west)

Center: South end and berm of miscellaneous disposal pit (from west)

Bottom: Active area of miscellaneous disposal pit (from west)

Page 7

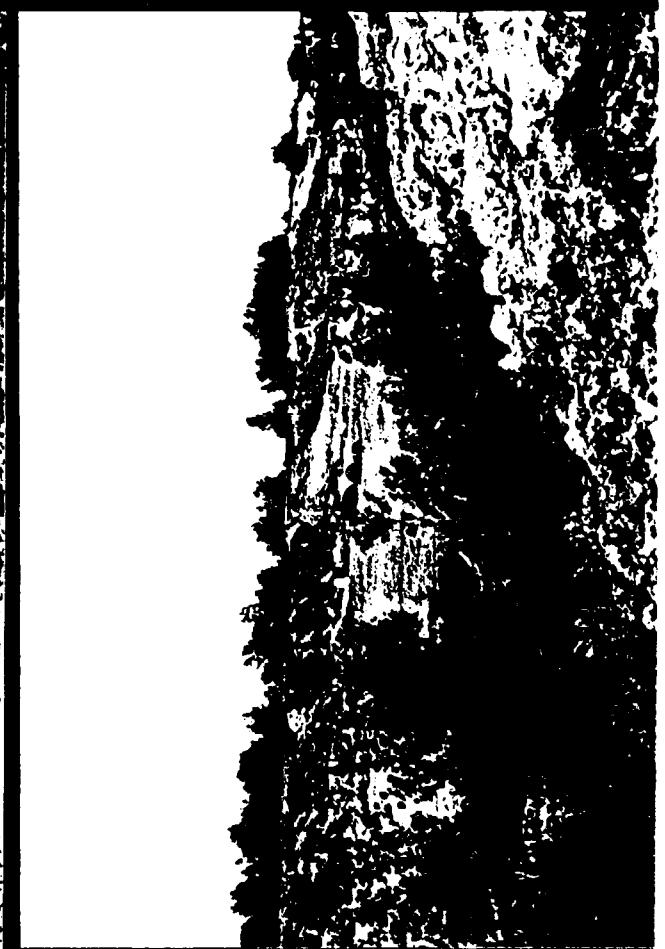
Top: Southernmost eastern monitoring
well

Center: Same as above

Bottom: Pumping station for make-up

Water for industrial canal

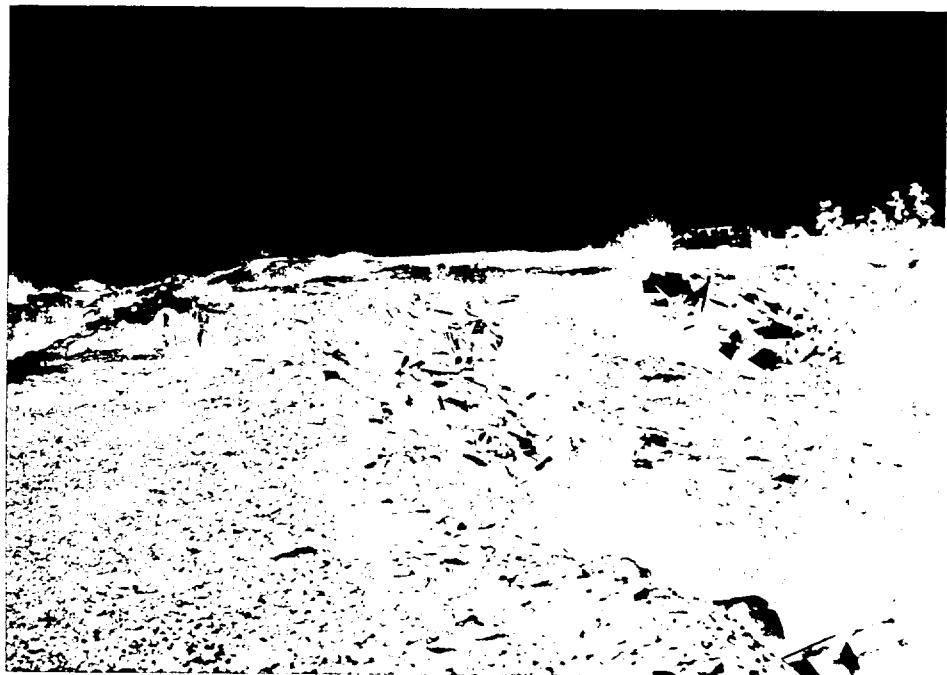
Page 8
Top: North end of east berm of
miscellaneous disposal pit (from near
center: Culverts leading to small
ditch north of miscellaneous
disposal pit



Page
two

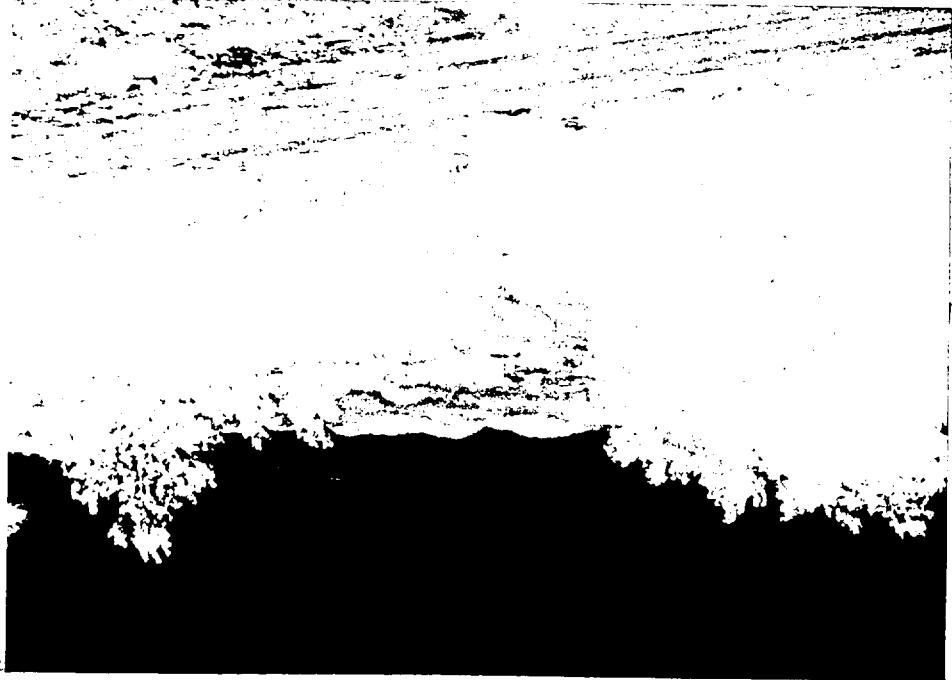




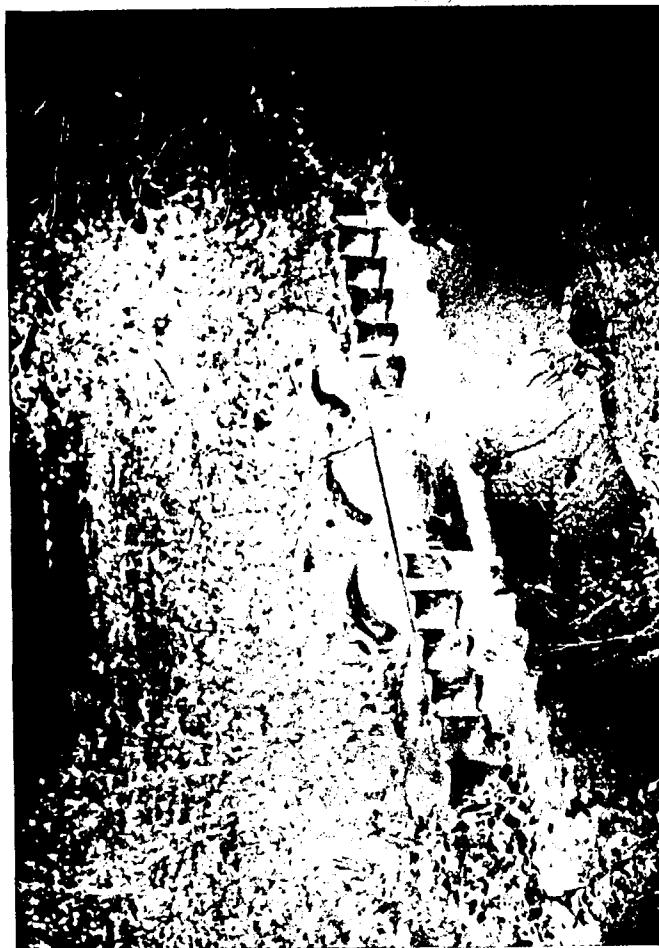
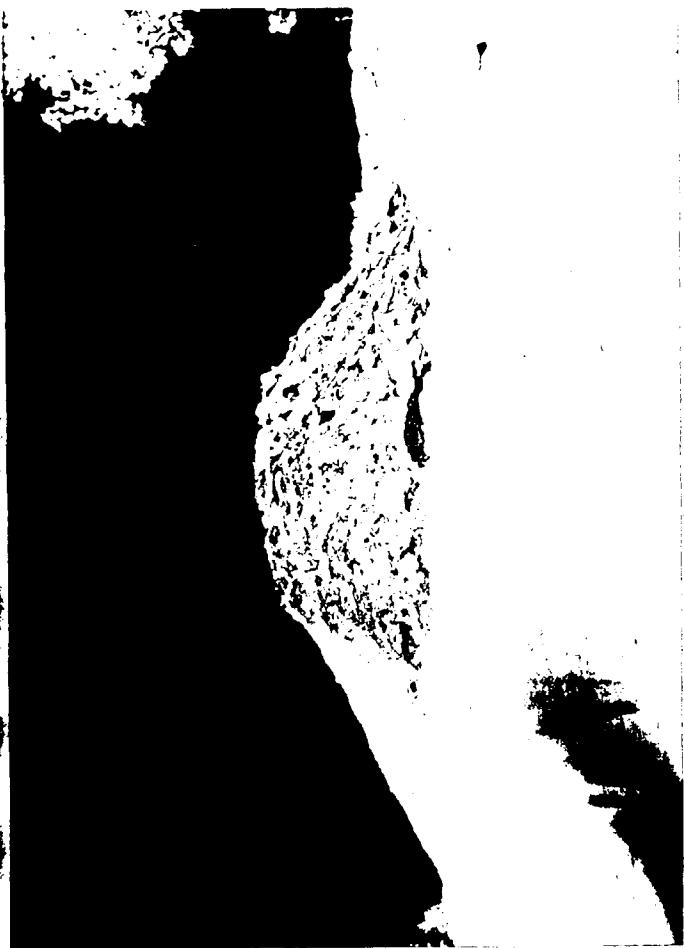




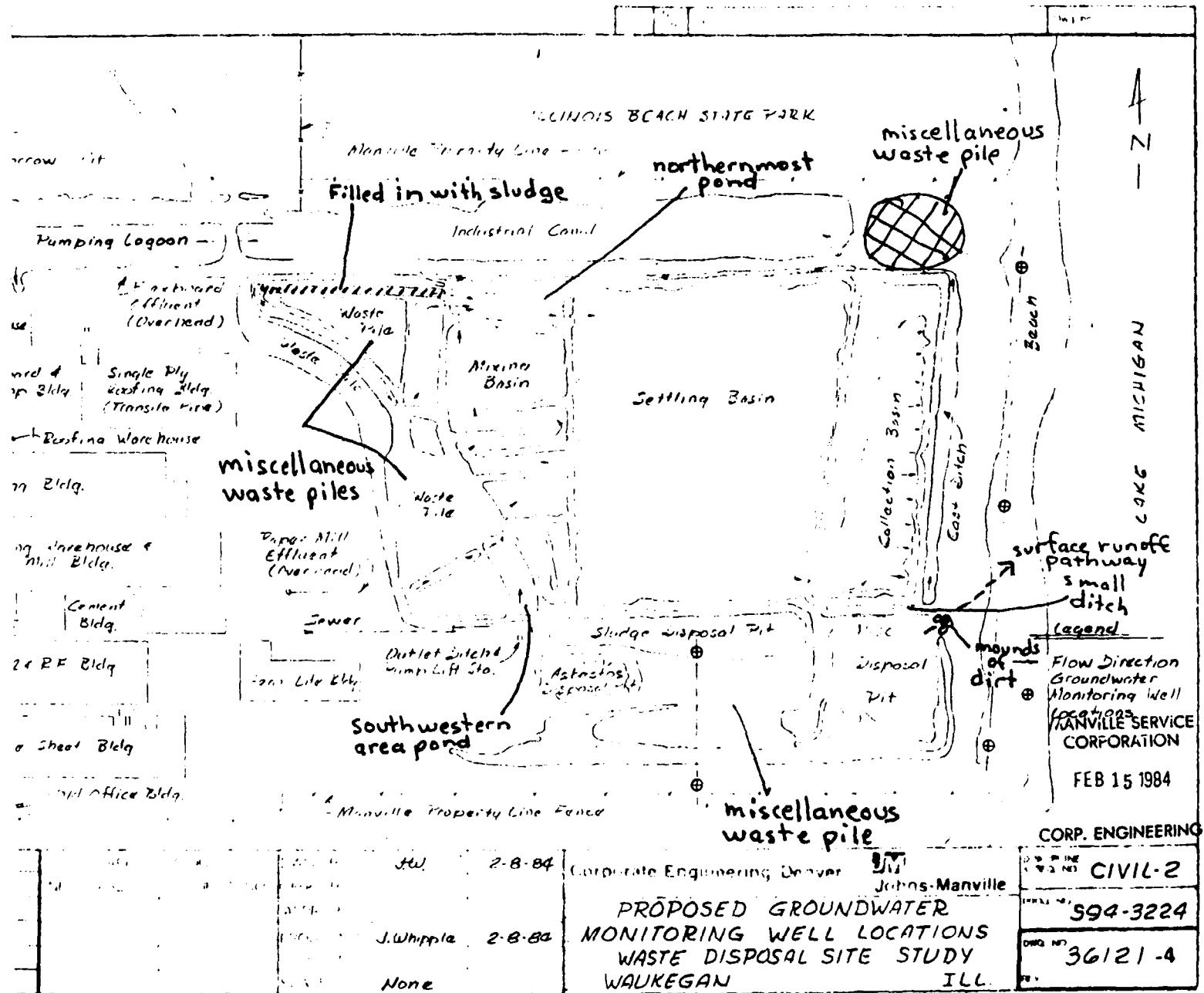


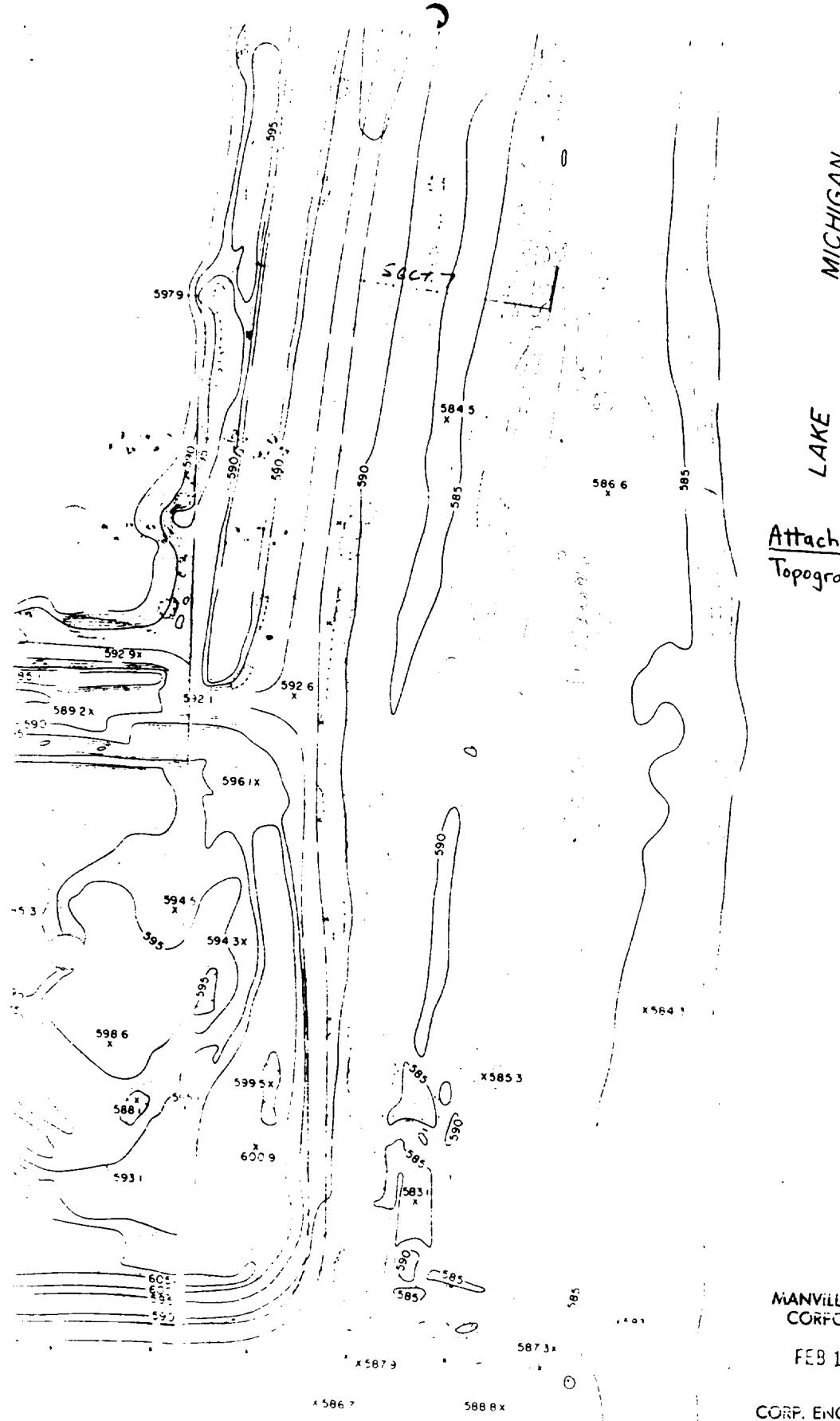


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eight



Attachment III
Site Map





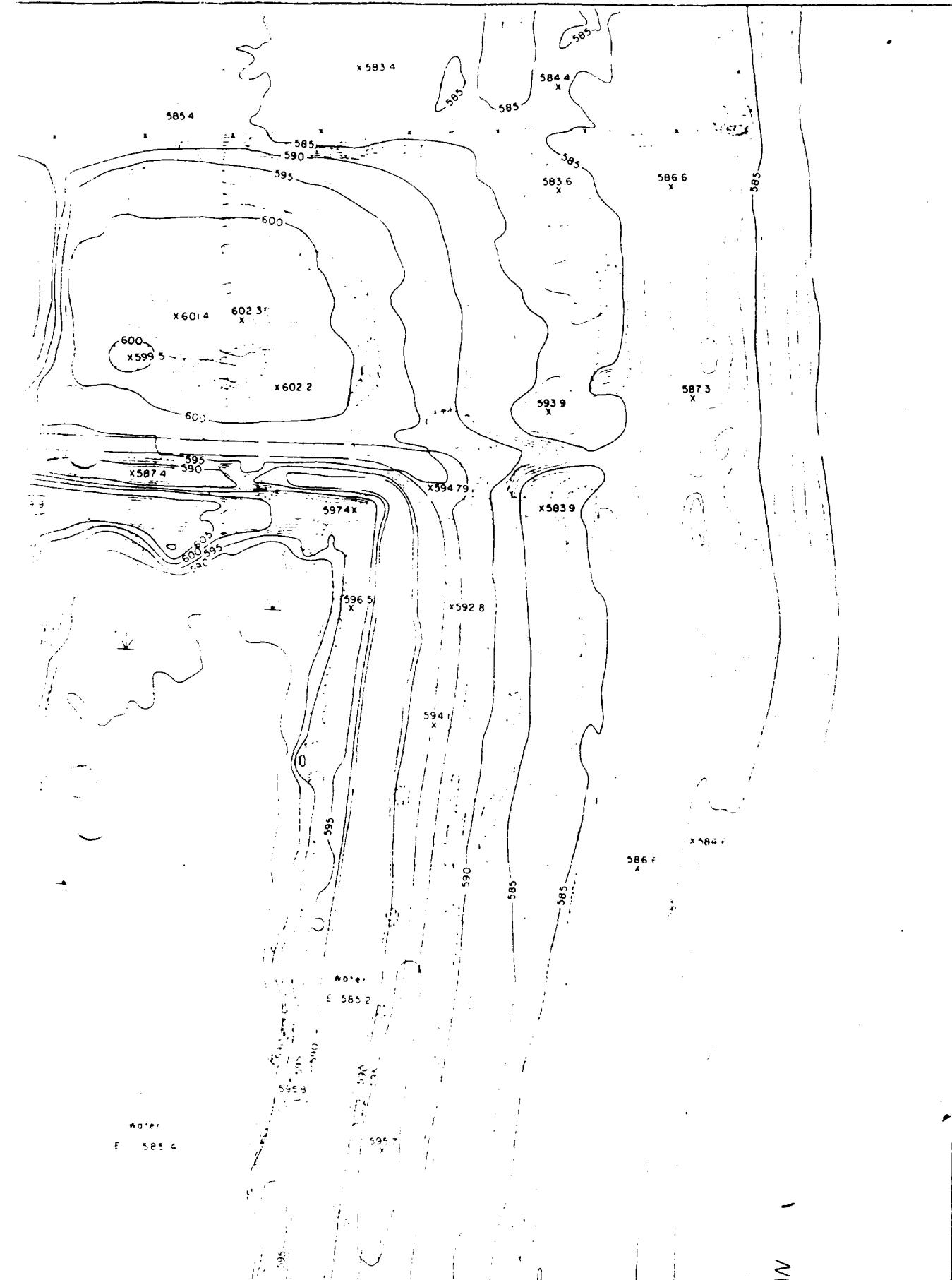
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Topographic Map

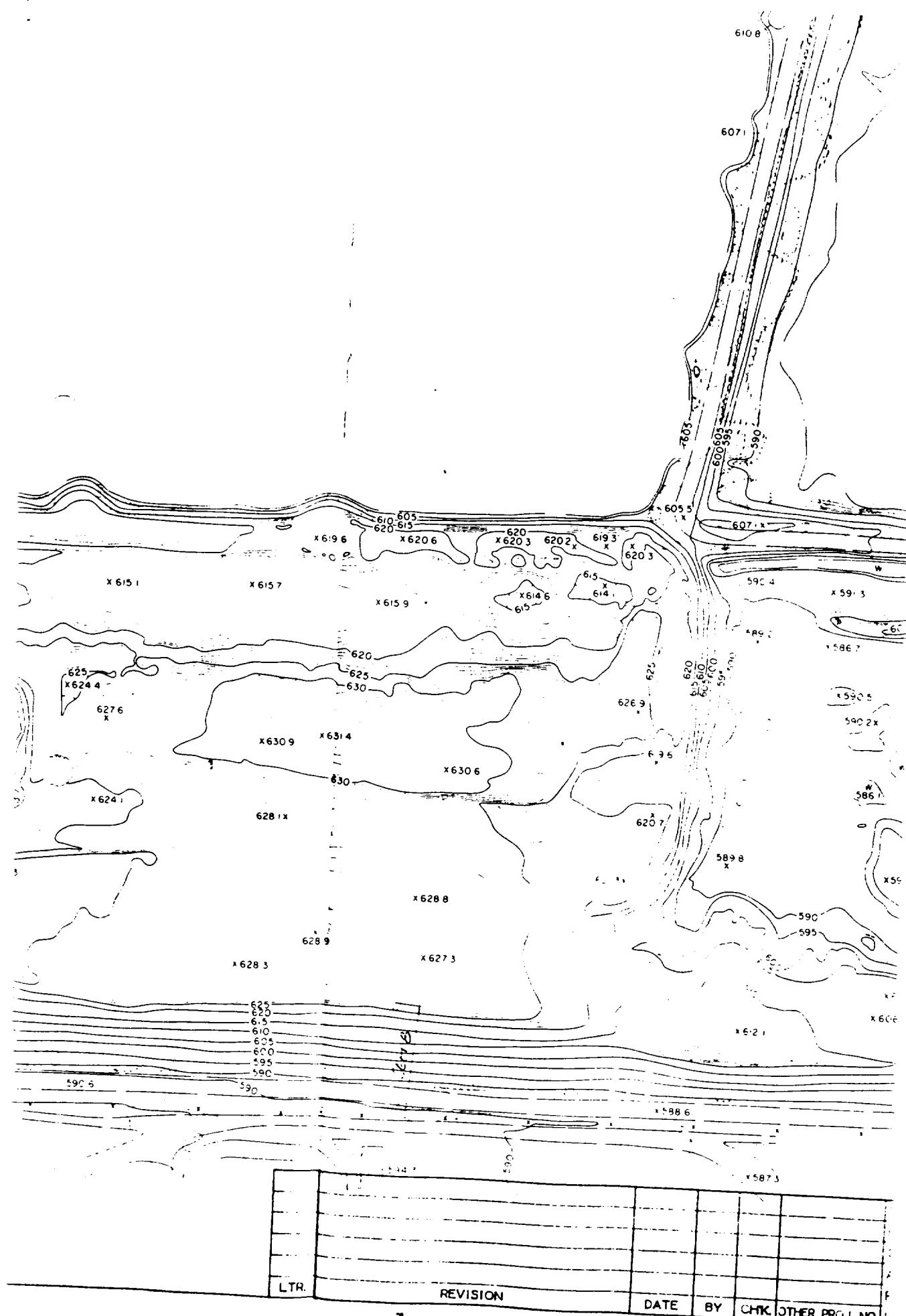
**MANVILLE SERVICE
CORPORATION**

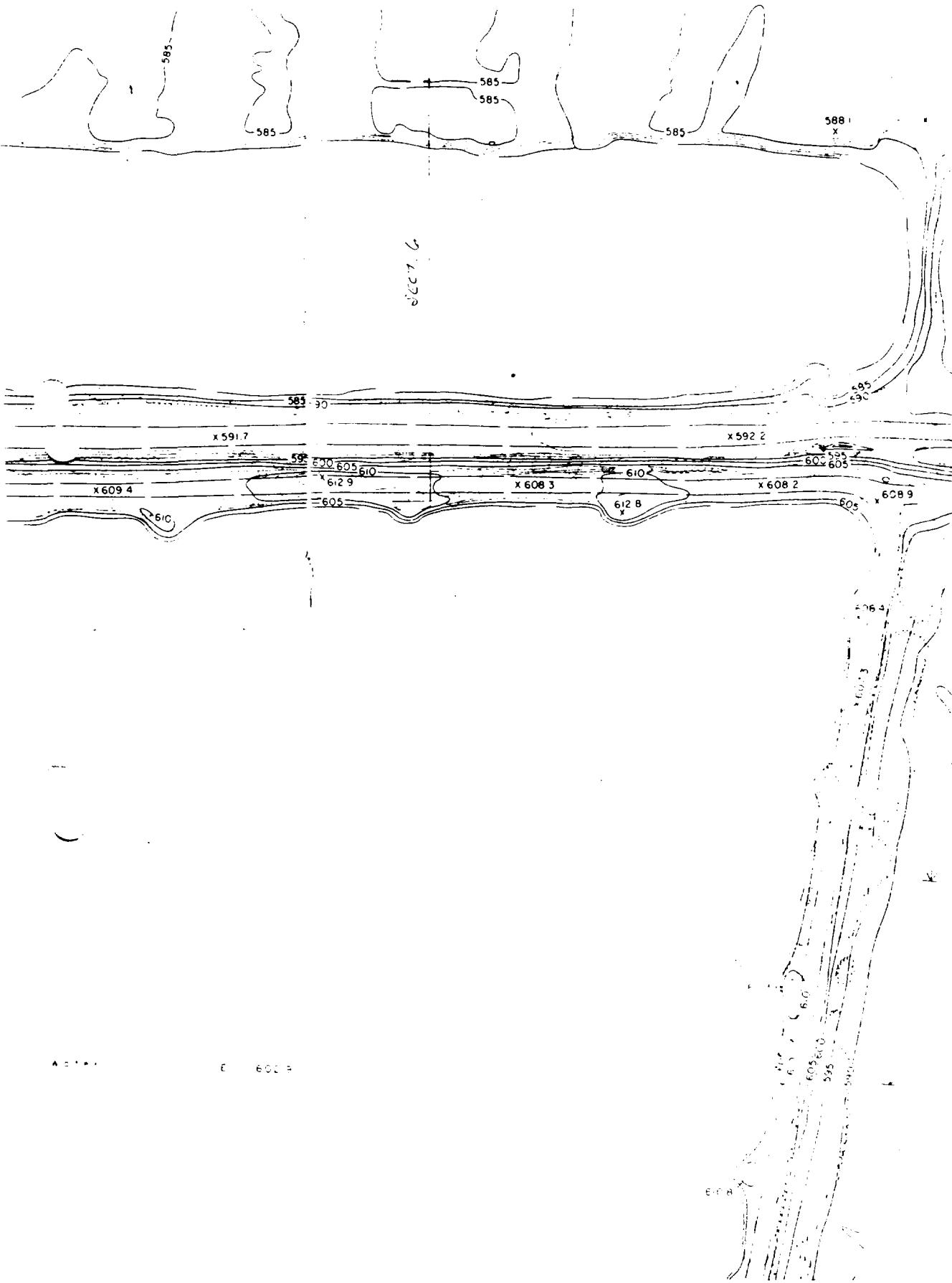
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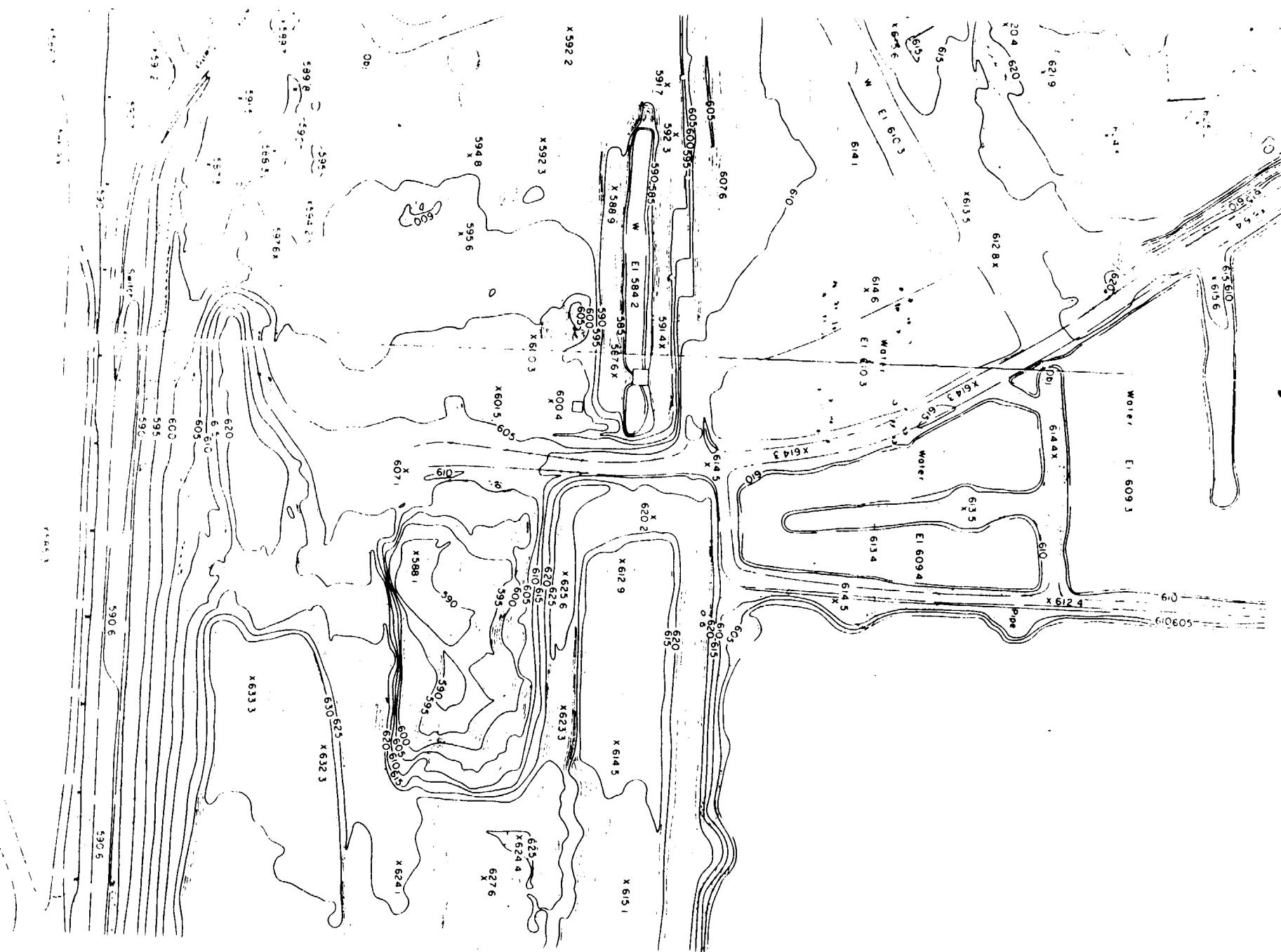
CORP. ENGINEERING

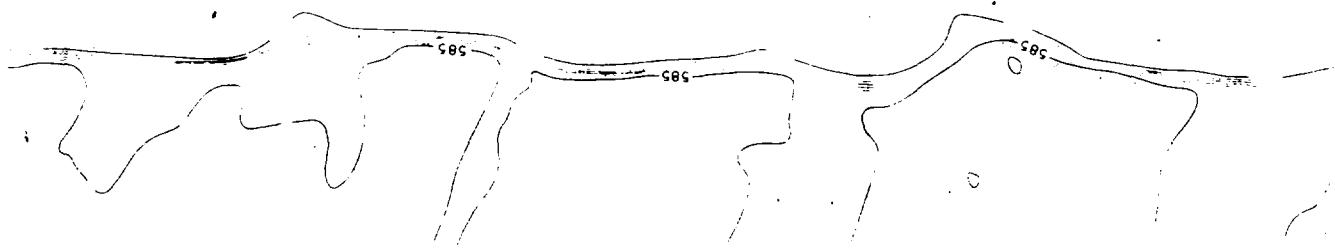
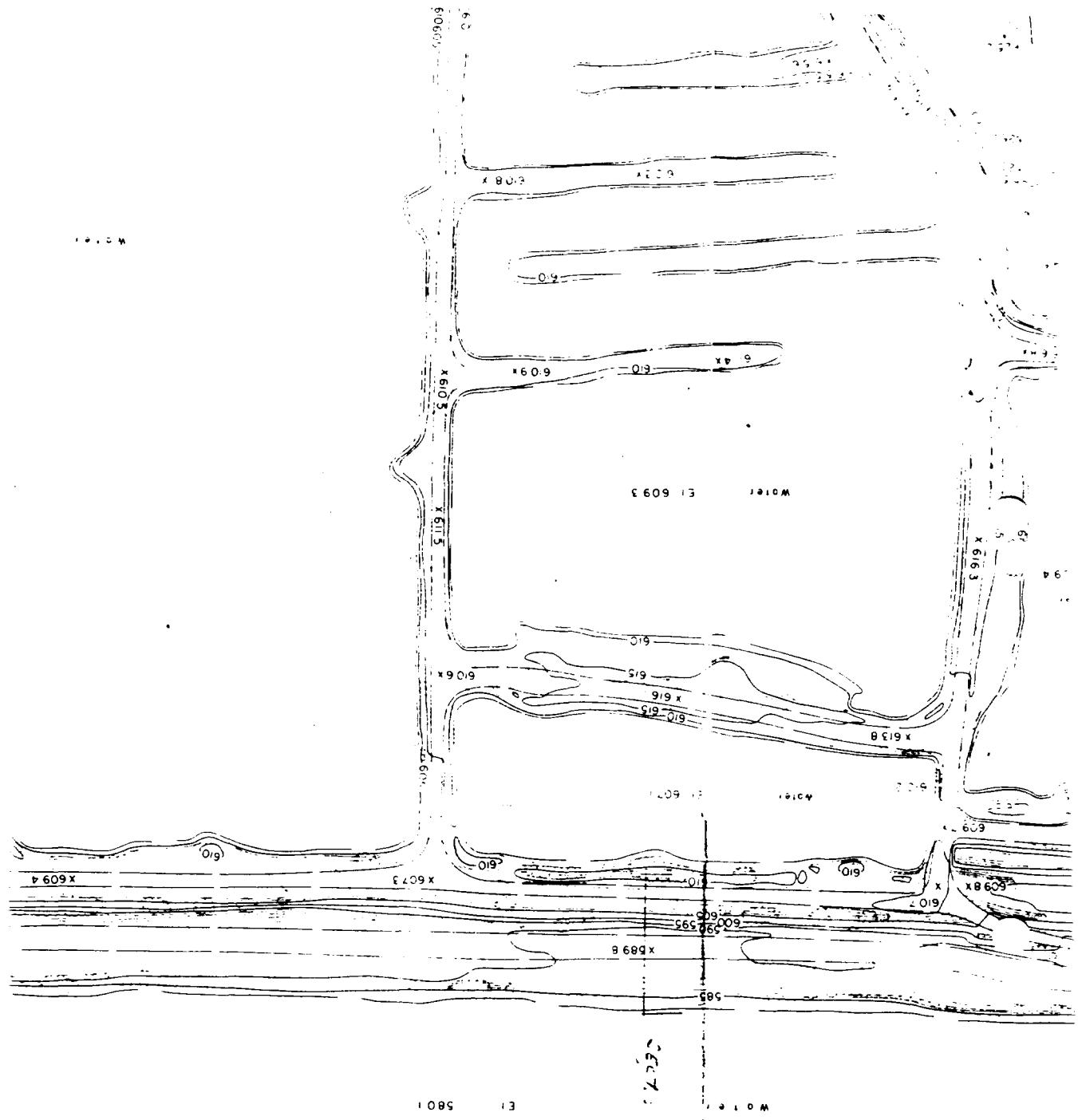
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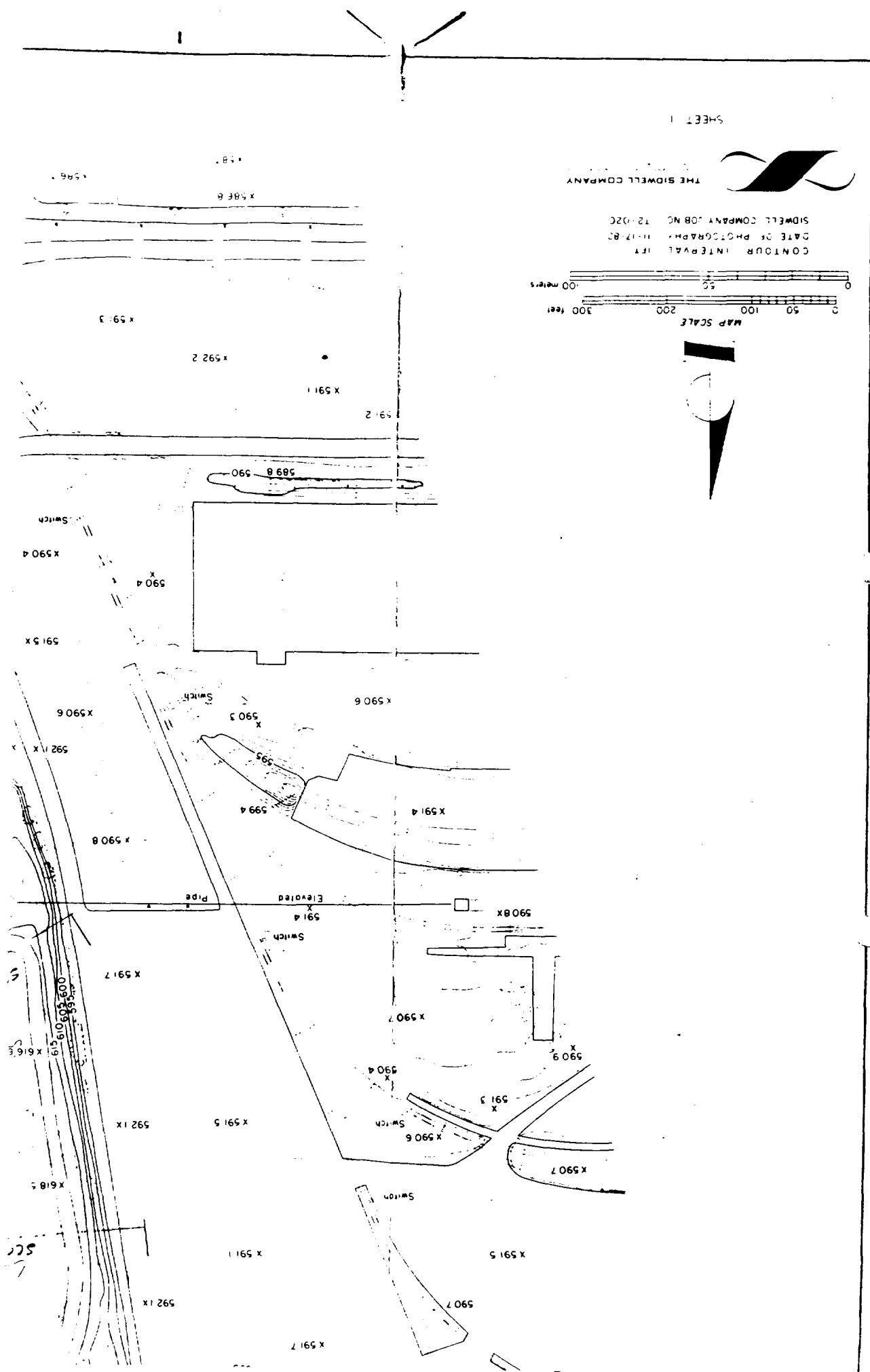
SHEET 1

THE SIDWELL COMPANY

SIDWELL COMPANY JOB NO. 12-02C
DATE OF PHOTOGRAPH: 11-17-83

CONDUCTOR INTENSYAL

MAP SCALE 0 50 100 200 300 400 feet
0 50 100 100 meters



MATCH SHEET 2

